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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,360	08/01/2000	MASAO MURADE	106394	9749

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EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT PAPER NUMBER

2871

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/601,360

Applicant(s)

MURADE, MASAO

Examiner

Prasad R Akkapeddi

Art Unit

2871

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 14, 21, 23, 24 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 14, 21, 23, 24 and 28-31 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 20.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 9, 11. 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/13/2003 has been entered.

Claim Objections

2. Claim 6 is objected to because of the following informalities: The 'Constant potential line' is not defined or shown in the figures. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-9,14,21,23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato et al. (Sato) (U.S.Patent No. 6,327,006).

As to claim 1: Sato discloses an electro-optical device (LCD), having a substrate (1), a plurality of scanning lines formed above the substrate (12A), a plurality of data lines (12B) formed above the substrate and intersecting the plurality of scanning lines a plurality of thin-film transistors (7), each thin-film transistor being disposed in correspondence with a respective one of intersections of the plurality of data lines and the plurality of scanning lines, a pixel electrode (8) disposed with a corresponding the thin film transistor (7), a storage capacitor (Cs) comprising a portion of a semiconductor layer (141) of the thin film transistor and a second storage capacitor electrode (142) comprising a conductive film of a gate electrode of the thin-film transistor (Fig. 4). Sato also discloses a light shielding first conductive layer (4P) disposed between the data line (12B) and the pixel electrode (8), the first conductive layer (4P) being electrically connected to the semiconductor layer (10) and the pixel electrode (Fig. 3) and a second conductive layer (4M) comprising a film of the first conductive layer as a storage capacitor line, at least partially overlapping the data lines (12A) and electrically connected to the second storage capacitor electrode (left side of Fig. 3).

As to claims 2-9: Sato discloses that the second conductive layer (4M) at least partially overlapping the pixel electrode (8) in a plan view as recited in claim 2, and the first conductive layer (4P) being electrically connected to the semiconductor layer (10) through a first contact hole and is electrically connected to the pixel electrode through a second contact hole (Fig. 3) as recited in claim 3,

the data lines (12A) being electrically connected to the semiconductor layer through a third contact hole as recited in claim 4, the data lines (12A) not at least partially overlapping the pixel electrode as recited in claim 5, a light-shielding film (5) formed on the substrate side of at least a channel region of the semiconductor layer with an underlying insulating film (Fig. 3) as recited in claim 7, the first conductive layer (4P) and the second conductive layer (4M) comprising a high-melting point metal such as Ti (col. 3, lines 46-49) as recited in claim 8, the second conductive layer (4M) and the data lines (12A) being partially disposed opposite to each other with an interlayer insulating film (not numbered in the figure, but can be seen) as recited in claim 9.

As to claim 14: Sato also discloses that the second conductive layer (4M) being electrically connected to the second storage capacitor electrode through a fourth contact hole (Figs. 3 and 4). As to the product-by process limitation 'fourth contact hole being opened when opening the first contact hole' "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

As to claims 21, 23 and 24: Sato discloses that the second conductive layer being shaped like an island in a plan view and at least partially delimiting a region along the data lines in a pixel-aperture region (Fig.3) as recited in claim 21, the second conductive layer being formed like a grid (Fig. 3) excluding a region in which the first conductive layer is present as recited in claim 23, the semiconductor layer (10) and the first conductive layer (4P) being connected to each other with an interconnecting conductive layer comprising a film comprising the data lines (12B) (Fig. 3) as recited in claim 24.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Zhang et al. (Zhang) (U.S. Patent No. 5,966,193).

Sato discloses all the limitations for the device including a first hole, a second hole, a third hole and a fourth hole (Fig. 3) and also discloses that such a device is constructed (abstract). Sato also discloses that the device is a LCD, hence an electro-optical device and the first conductive layer (4P) and the second conductive layer (4M) are both of a metal film such as Ti (col. 3, lines 46-49), hence are formed with a same film.

However, Sato does not disclose explicitly a method for fabrication of such a device. Zhang on the other hand, in disclosing a LCD device having coupling capacitances and shielding films, discloses a fabrication process (Figs. 4A to 4E), (Figs. 7A to 7E), (Figs. 10A-10F) and (cols 5-10). Zhang also discloses multiple holes, including a fifth hole.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the method of fabrication as disclosed by Zhang to the device of Sato such that an electro-optical device can be fabricating that includes all the limitations that are disclosed by Sato.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

PrA

Prasad R Akkapeddi
Examiner
Art Unit 2871

[Signature]
ROBERT H. KIM
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 2800